REMARKS

By this Amendment, claims 15, 17-18, 20-30, 32-33, 35-45, 47-48, 50-60, 62-71 and 74-77 are pending in the present Application.   Claims 16, 19, 31, 34, 46, 49, 61 and 72-73 have previously been canceled without prejudice or disclaimer.   No new matter is introduced.

The Office Action dated 2/28/2011:

(1)   rejected claims 15, 17-18, 20-23, 25, 27, 29-30, 32-33, 35-38, 40, 42, 44-45, 47-48, 50-53, 55, 57, 59-60, 62-67, 69, 71 and 74-77 under 35 U.S.C. § 103(a) as being unpatentable over *Watson et al.* (US 2004/0133923) in view of *Fujinami* (US 7,664,951), and further in view of *Jiang et al.* (US 2009/0154445); and

(2)   rejected claims 24, 26, 28, 39, 41, 43, 54, 56, 58, 68 and 70 under 35 U.S.C. § 103(a) as being unpatentable over *Watson* in view of *Fujinami* and *Jiang*, and further in view of *Connelly et al.* (US 7,284,064).

A.   35 U.S.C. § 103(a) Rejection of Claims 15, 17-18, 20-23, 25, 27, 29-30, 32-33, 35-38, 40, 42, 44-45, 47-48, 50-53, 55, 57, 59-60, 62-67, 69, 71 and 74-77 Over *Watson* In View Of *Fujinami*, and Further In View Of *Jiang*

Applicants respectfully traverse the 35 U.S.C. § 103(a) rejection of claims 15-18, 20-23, 25, 27, 29-33, 35-38, 40, 42, 44-48, 50-53, 55, 57, 59-67, 69, 71 and 74-77 over *Watson* in view of *Fujinami* and further in view of *Jiang*, because all features of the claims are not disclosed by the applied art, either individually or in combination.   For example, independent claim 15 recites, *inter alia*, the features of "determin[ing] to store, in the memory, at least one piece of pre-broadcast content associated with a same at least one piece of broadcast content maintained by a content source, the at least one piece of pre-broadcast content being stored before a scheduled time for a live broadcast of the associated same at least one piece of broadcast content by the content source, the scheduled time specified by a schedule."   Further, independent claims

30, 45 and 60 recite similar features.   Applicants submit, as presented below, that the cited

combination of *Watson* in view of *Fujinami*, and further in view of *Jiang*, neither discloses nor

suggests such features.

First, with respect to *Watson*, according to the statement of the rejection, the Examiner

contends that

> Re claim 15, Watson et al disclose … determine to store, in the memory, at least
> one piece of pre-broadcast content (The movies are pushed down by the provider
> to reside passively in the box for a finite time period, 0012; A movie may arrive
> and be stored in the set-top box, however it may have a start date associated with
> it which does not allow it to be viewed until that date, 0014).

(*Office Action*, P. 4, lines 14-23)   Applicants respectfully disagree.   *Watson* does not disclose

or suggest the storage of pre-broadcast content, but rather (in accordance with the Examiner's

own statement regarding *Watson*) the disclosure of *Watson* provides that the movie is simply

"pushed down" to the set-top box for passive storage until a time period when the user is

permitted to view the movie.   (*See Watson*, ¶¶ 12 and 14, as cited by the rejection)   In other

words, a movie may be "pushed down" to the set-top box at a time prior to a time period when

the user is permitted to view the movie – the movie, however, has nothing to do with a

subsequent broadcast of any associated content and is not stored for viewing at a scheduled time

for a future "live" broadcast of any such associated broadcast content.

More specifically, *Watson* generally provides access to a library of movies, or any other

audio/video content available for viewing at anytime, where the content is pushed down by the

provider to reside passively in the box for a finite time period.   (*Watson*, Abstract and ¶ 12)

The content is not "streamed" to the set-top box in real-time, but instead content files are

"packetized" and these packets are continuously transmitted to the set-top box where they are

incrementally reassembled.   (*Watson*, ¶ 12)   The content also includes metadata information

that defines certain characteristics of the movie.   (*Watson*, ¶ 14)   *Watson* further provides that:

> For example, a movie may have an associated start and end date or time which
> limits the time period in which a movie can be viewed. A movie may arrive and
> be stored in the set-top box, however it may have a start date associated with it
> which does not allow it to be viewed until that date. This allows for any
> discrepancies in transmission times for movies that may vary from one location to
> another, and also allows for movies such as new releases to be "pre-loaded" and
> immediately available on the official release date. Similarly, the content provider
> may supply an end date associated with a movie, after which date the movie can
> no longer be viewed, and is automatically deleted from the set-top box.

(*Watson*, ¶ 14)   Accordingly, a number of movies and/or other content (a library) is loaded into

the set-top box as a background process, and a given movie may have associated data that

dictates a time period as to when the user may be permitted to view the movie.   Further, a given

user can chose to view the content at any time within the permitted viewing period, and different

users may view the content at different times within that period.   The movie, however, is not a

"pre-broadcast" of content, where the content is scheduled for viewing at a specific time when an

associated live broadcast of associated broadcast content is scheduled.   The movies (or content)

of *Watson*, therefore, do <u>not</u> constitute "pre-broadcast content" in the manner or context as

presently claimed.

Second, according to the statement of the rejection, the Examiner acknowledges that

Watson does not explicitly disclose the present claim features of (1) the pre-broadcast content

being associated with broadcast content and being stored before a scheduled time for a live

broadcast of the associated broadcast content, (2) accessing the pre-broadcast content from the

memory at a time synchronized with the scheduled time for the live broadcast of the associated

broadcast content, and (3) receiving the live broadcast of the associated broadcast content and

presenting the accessed pre-broadcast content synchronized with the scheduled time for the live

broadcast of the associated broadcast content.   (*Office Action*, P. 4, line 23 to P. 5, line 9)

Instead, with respect to the *Fujinami* reference, the Examiner asserts that:

> Fujinami et al disclose determine to access accessing at least one piece of
> pre-broadcast content from the memory no sooner than the scheduled time for
> broadcast of the same at least one piece of content (each preloaded stream file
> stored in the receiving apparatus is synchronized with the clock transmitted
> from the broadcasting station to be reproduced, col.17, lines 13-16; computes
> the difference between the current time and the program start time. The
> computed difference denotes an elapsed time from the start of the program,
> col.17, lines 1-12).

(*Office Action*, P. 5, lines 10-24)   The rejection then justifies the combination, asserting that "It

would have been obvious for any person of ordinary skill in the art at that time the invention was

made to incorporate the teaching of Fujinami into the invention of Watson for the purpose of

limiting congestion of bandwidth during transmission." (*Office Action*, P. 5, lines 25-27)

Applicants respectfully disagree, and contend that there is no reasonable basis for the

modification of the *Watson* system, based on the teaching of *Fujinami*, in the manner asserted by

the rejection.

Fujinami generally provides a transmitting apparatus adapted to effectively use the band

for transferring programs of television broadcasting, by transmitting a program to a receiving

apparatus and storing the program in a time zone in which the bandwidth is not tight, and

providing the program in a prime time, thereby providing an effect as if there were an increase in

channels in the prime time.   (*Fujinami*, col. 5, lines 43-49)   According to the cited passage of

the disclosure at column 17, *Fujinami* provides that each preloaded program stored in the

receiving apparatus is synchronized with a clock transmitted from the broadcasting station.

(*Fujinami*, col. 17, lines 13-16)   When the user selects a preloaded program channel on the

basis of program guide information, before starting the program concerned, the receiving

apparatus references the EPG information to determine whether or not the program is a preloaded

program. (*Fujinami*, col. 16, lines 49-57) If the program is a preloaded program, then the receiving apparatus selects the preloaded data stream, and time and key information is obtained to determine current time, program start time, the file name for use in the program concerned, and the decryption key. (*Fujinami*, col. 16, lines 58-64) At the same time, the clock of the receiving apparatus is synchronized with the clock of the broadcast station, and the receiving apparatus computes the difference between the current time and the program start time. (*Fujinami*, col. 16, line 65 to col. 17, line 2) The computed difference denotes a elapsed time from the start of the program to a current skip position, and the receiving apparatus thereby obtains the position corresponding to the current time in the stream file. (*Fujinami*, col. 17, lines 4-9)

Fujinami thereby addresses the synchronization of preloaded content of a set-top box with associated current time of a broadcast stream. *Watson*, on the other hand, as presented above, addresses the preloading of content to provide a library of movies, or other audio/video content, that is available for viewing at anytime, whereby the content is pushed down by the provider to reside passively in the box for a finite time period. The preloaded content of *Watson* is associated with a time period during which users are permitted to view the content. The preloaded content of *Watson*, therefore, is available for viewing by a user anytime within the permitted time period, and the availability is not associated with any specific viewing schedule. *Watson* simply has nothing to do with synchronizing preloaded content with a live broadcast of associated broadcast content.

Accordingly, there would have been no reasonable basis to modify the system of *Watson* to tie the preloaded content to associated broadcast content, and to synchronize the presentation of the preloaded content with the live broadcast of the associated broadcast content, and *Watson*

presents no issues that would motivate one of skill in the art to modify the *Watson* system in such

a manner, as asserted by the rejection. As stated by the Supreme Court of the United States in

KSR Intern. Co. v. Teleflex Inc., "[the obviousness] analysis should be made explicit." *KSR*

Intern. Co. v. Teleflex Inc., 550 U.S. 398, 418 (2007). The Court further ruled that "'rejections

on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must

be some articulated reasoning with some rational underpinning to support the legal conclusions

of obviousness.'" *Id.* (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)). Applicants

respectfully submit, therefore, that the §103(a) rejection fails to present a *prima facie* case of

obviousness, at least with respect to the cited combination of *Watson* and *Fujinami*, as required

by applicable law.

Third, with respect to the *Jiang* reference, according to the statement of the rejection, the

Examiner asserts that:

> Jiang et al disclose receive the live broadcast of the associated same at least
> one piece of broadcast content from the content source; and determine to
> present the accessed at least one piece of pre-broadcast content synchronized
> with the scheduled time for the live broadcast of the associated same at least
> one piece of broadcast content by the content source (Video data smoothing
> preloads part of the video data to a smoothing buffer at the client before play-
> out. After play-out has started, the rest of the video data may be transmitted in
> a less bursty fashion without compromising the quality of the video data. For
> given video data, video data smoothing generates the transmission schedule,
> 0027; 0037; assume the first 25 frames were preloaded to the client buffer
> before play-out. Once play-out started, one frame was played at the beginning
> of every time slot, 0084).

(*Office Action*, P. 6, lines 1-11)   Applicants respectfully disagree.

Jiang discloses a video data smoothing method and system that reduces the variability of

the bandwidth requirement for transmitting video data. (*Jiang*, ¶ 26)   *Jiang* accomplishes this

video smoothing by **preloading part of the video** to a smoothing buffer at the client device

before play-out, and transmitting **the rest of the video** after play-out has started, as described in

the following paragraphs of *Jiang*:

> In the present invention, video data smoothing is used as an effective way to reduce the variability of the bandwidth requirement for transmitting the video data, which can potentially simplify other operations such as resource allocation and improve network utilization.   (*Jiang*, ¶ 26)
>
> Video data smoothing **preloads part of the video data to a smoothing buffer at the client before play-out. After play-out has started, the rest of the video data may be transmitted in a less bursty fashion without compromising the quality of the video data. For given video data, video data smoothing generates the transmission schedule, which includes the rates at which the video data will be delivered during play-out, based on buffer size, available bandwidth and allowed play-out delay**. A valid transmission schedule must guarantee that, given the bandwidth it requires, the smoothing buffer will not overflow or underflow during the entire play-out of the video data. Depending on the user's requirements, the smoothing algorithm may also need to optimize certain characteristics of the transmission schedule, such as peak rate, number of rate changes, etc.   (*Jiang*, ¶ 27)
>
> In addition, smoothing may particularly improve the quality of the video data received through a wireless link. This is because the fluctuation of wireless channel conditions, e.g., the rate at which packets are successfully delivered over the wireless link, may sometimes be lower than their arrival rate from a wired link. When packets are delayed at the base-station for too long, they eventually miss their play-out time resulting in degradation of video data quality. If the video data is smoothed, the scheduling arrival time of a packet is normally earlier than its play-out time. Therefore, more delay at a base-station can be tolerated, and the packet drop rate may be reduced.   (*Jiang*, ¶ 29)

In other words, *Jiang* discloses the buffering of an initial portion of a video stream prior

to the start of the play-out of the video.   Then, once the play-out has started, the remainder of

the video stream is transmitted and fed through the buffer.   The subsequent transmission of the

remainder of the video stream can thereby be transmitted in a more bandwidth efficient fashion

without adversely affecting the smoothness of the video play-out.   During play-out, the video

data is pulled from the buffer a constant rate to support a smooth play-out.   Further, the data

buffering is based on a transmission schedule determined in view of the rates at which the video

data will be delivered during play-out, based on buffer size, available bandwidth and allowed play-out delay. The transmission schedule is set to ensure that the buffer does not overflow or underflow during the entire play-out of the video data. Namely, the preloaded content stored in the buffer and the subsequent video data stream is merely different portions of the same video stream, all fed through the buffer to facilitate the video smoothing process.

Clearly, therefore, the disclosure of *Jiang* cannot be interpreted as addressing the access of the preloaded (pre-broadcast) content at a time synchronized with a scheduled time for a live broadcast of the same broadcast content, as presently claimed. Additionally, *Jiang* cannot be interpreted as disclosing the presentation of the pre-broadcast content synchronized with the scheduled time for the live broadcast of the corresponding broadcast content, in the manner as presently claimed. For example, the buffered content of *Jiang* is certainly not synchronized with a live broadcast of the same content. Further, the transmission schedule of Jiang cannot be construed as a schedule for a live broadcast of the associated broadcast content with which the preloaded content is to be synchronized. As quoted above from the *Jiang* disclosure, "the video data smoothing generates the transmission schedule, which includes the rates at which the video data will be delivered during play-out, based on buffer size, available bandwidth and allowed play-out delay." (*Jiang*, ¶ 27) Accordingly, the transmission schedule of *Jiang* does not relate to (and cannot reasonably be interpreted as relating to) a broadcast schedule for associated broadcast content, but rather specifies transmission rate. Indeed, *Jiang* lacks any disclosure of, and is entirely inapplicable to, the access and presentation of pre-broadcast content synchronized with the live broadcast of the corresponding broadcast content – by definition, you cannot present broadcast content from a buffer, and maintain synchronization with the live broadcast of the same content. Furthermore, in the context of the *Jiang* system, a "scheduled time for

broadcast" would not make any sense, because Jiang addresses presentation of a stream at the request/schedule of a user and not relating to any broadcast by a content provider.

Accordingly, *Jiang* fails to disclose or suggest the features of determining to access pre-broadcast content at a time synchronized with the scheduled time for the live broadcast of the corresponding broadcast content, receiving the live broadcast of the corresponding broadcast content, and determining to present the accessed pre-broadcast content synchronized with the live broadcast of the corresponding same broadcast content, particularly in the manner as presently claimed.

Moreover, to support the cited combination, the rejection asserts that "[i]t would have been obvious for any person of ordinary skill in the art at that time the invention was made to incorporate the teaching of Jiang into the invention of Watson as modified by Fujinami for the purpose of allowing the system to splice to preloaded portion of contents with a live portion of the same content during transmission." (*Office Action*, P. 5, lines 1-4)   The disclosure of *Jiang*, however, (as presented above) provides a smoothing process for the transmission of video data that reduces or eliminates the adverse affects of packet delays and packet losses.   *Jiang* lacks any suggestion or indication whatsoever that would lead one of skill in the art to apply the video smoothing (buffering) process of *Jiang* to facilitate the splicing of a "preloaded portion of contents with a live portion of the same content during transmission."   For example, as explained above, *Jiang* lacks any disclosure of (or applicability to) a live broadcast, let alone the synchronization of pre-broadcast content with a corresponding live broadcast of the content.

Watson provides a digital home movie library, essentially functioning as a pay-per-view system that eliminates the trip to the movie rental store and the possibility of being charged for late fees (¶ [0024]).   In particular, *Watson* preloads movies to the user's home system, and then

releases per movie for view on demand.   *Watson* replaces on-demand movie transmission with movie preloading plus on-demand movie viewing locally.   *Watson* discourages, and thus teaches away from "receiving live broadcast of the same at least one piece of content from the content source."   Further, *Fujinami* balances broadcast load during prime times "as if there were an increase in channels in the prime time (col. 5, lines 48 through 49)."   The prime time denotes a time zone in which audience rate is higher than in other time zones; for example, a time zone from 19:00 to 23:00 (col. 5, lines 15-17).   As such, two types of broadcasting are available in *Fujinami* during prime time: one is the normal/live broadcasting in which transmitted programs (e.g., Program B, Program C, and Program D in Channel A in FIG. 11) are viewed in real time on the receiver side; and the other type includes programs (e.g., Program X, Program Y in Channel B) that are preloaded in nonprime time periods and viewable in prime time (col. 11, lines 31-40 and 55-57; FIGS. 9 & 11).   To reduce the broadcast load, a preloaded program can only be accessed locally in *Fujinami*, but not to be "received live from the content source." Accordingly, (assuming for the sake of argument that the cited combination of *Watson* in view of *Fujinami* would have been supported by a reasonable basis – which, as presented above, is an assumption with which Applicants disagree) there would have been no reasonable basis to apply the teaching of *Jiang* to the cited combination of *Watson* and *Fujinami*.

Accordingly, for at least the foregoing reasons, neither *Watson*, *Fujinami* or *Jiang* alone, nor the cited combination of *Watson* in view of *Fujinami* and further in view of *Jiang*, render independent claims 15, 30, 45 and 60, or claims 16-18, 20-23, 25, 27, 29, 31-33, 35-38, 40, 42, 44, 46-48, 50-53, 55, 57, 59, 61-67, 69, 71 and 74-77 depending therefrom, obvious under 35 U.S.C. § 103(a).

B.   35 U.S.C. § 103(a) Rejection of Claims 24, 26, 28, 39, 41, 43, 54, 56, 58, 68 and 70 Over *Watson* In View of *Fujinami* and *Jiang*, and Further In View of *Connelly*

Applicants respectfully traverse the 35 U.S.C. § 103(a) rejection of claims 24, 26, 28, 39, 41, 43, 54, 56, 58, 68 and 70 over *Watson* in view of *Fujinami* and *Jiang*, and further in view of *Connelly*, because all features of the claims are not disclosed by the applied art, either individually or in combination.

Claims 24, 26, 28, 39, 41, 43, 54, 56, 58, 68 and 70 depend from independent claims 15, 30, 45 and 60, respectively, and the Office Action applies the combination of *Watson* in view of *Fujinami* and *Jiang* to these claims on the same bases as with the § 103(a) rejection of their respective independent claims (addressed in Section A, above). The Office Action cites to *Connelly* for the alleged disclosure of the additional features recited in these dependent claims (*Office Action*, Pp. 15-18) *Connelly*, however, also lacks the disclosure or suggestion of the features of accessing pre-broadcast content, receiving a live broadcast of the corresponding broadcast content, and presenting the accessed pre-broadcast content synchronized with the live broadcast of the corresponding broadcast content, in the manner recited in independent claims 15, 30, 45 and 60, and thus fails to remedy the deficiencies of *Watson* in view of *Fujinami* and *Jiang*. Accordingly, for at least the foregoing reasons, neither *Watson*, *Fujinami*, *Jiang* or *Connelly* alone, nor the cited combination of *Watson* in view of *Fujinami* and *Jiang*, and further in view of *Connelly*, render claims 24, 26, 28, 39, 41, 43, 54, 56, 58, 68 and 70 obvious under 35 U.S.C. § 103(a).

C.   Conclusion

Therefore, the present application, as amended, overcomes the rejections of record and is in condition for allowance.   Favorable consideration is respectfully requested.   If any unresolved issues remain, it is respectfully requested that the Examiner telephone the undersigned attorney at (703) 519-9952 so that such issues may be resolved as expeditiously as possible.

To the extent necessary, a petition for an extension of time under 37 C.F.R. §1.136 is hereby made.   Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 504213 and please credit any excess fees to such deposit account.

Respectfully Submitted,

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